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105501
SHAUGHNESSEY NO.

REVIEW NO.

EEB REVIEW

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TYPE PRODUCT(S) : I, D, H, F, N, R, S Herbicide

DATA ACCESSION NO(S). 408404-01

PRODUCT MANAGER NO. R. Taylor (25)

PRODUCT NAME(S) Tebuthiuron

COMPANY NAME Elanco Products Company

SUBMISSION PURPOSE Submission of bee toxicity data

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.
105501	Tebuthiuron	

EEB REVIEW

Tebuthiuron

100 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

The registrant (Elanco) submitted data from an acute contact toxicity test with honey bees, in support of registration of tebuthiuron.

101 Hazard Assessment

101.2 Likelihood of Adverse Effects on Nontarget Organisms

Honey Bees

Data from a honey bee acute study indicate that tebuthiuron is practically nontoxic to honey bees. Hazard to honey bees is not anticipated from the use of tebuthiuron.

101.4 Adequacy of Toxicity Data

Data are sufficient to determine that tebuthiuron is practically nontoxic to honey bees. Further testing on honey bees is not required for this compound.

103 Conclusions

EEB has reviewed the submitted honey bee acute contact test. The study was determined to be core. The data will be placed in the EEB file for future reference.

Allen W. Vaughan 3.31.89
Allen W. Vaughan, Entomologist
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DATA EVALUATION RECORD

1. Chemical: Tebuthiuron

2. Test Material: Technical, 99.1% ai

3. Study/Action Type: Honey bee acute contact LD_{50}

4. Study ID: Hoxter, K.A., and M. Jaber. 1988. The Acute Contact Toxicity of Tebuthiuron to the Honey Bee. Wildlife International Ltd. Project No. 151-108. Unpublished study submitted by Elanco Products Company, Greenfield, IN. EPA Reg. No. 1471-101. EPA Acc. No. 408404-01.

5. Reviewed By: Allen W. Vaughan, Entomologist, EEB/HED — Signature: Allen W. Vaughan — Date: 3-31-89

6. Approved By: Norman Cook, Section Head, EEB/HED — Signature: Norman J. Cook — Date: 3.31.89

7. Conclusions:

The study is scientifically sound and fulfills the guideline requirement for an acute contact toxicity study on honey bees. With an LD_{50} > 100 ug/bee, tebuthiuron may be characterized as practically nontoxic to honey bees.

8. Recommendations: N/A.

9. Background:

This study was submitted in response to a registration standard requirement.

10. Discussion of Individual Tests or Studies: N/A

11. Materials and Methods (Protocols):

Apparently healthy worker bees, one to seven days of age, were collected from research colonies. Bees were then transferred directly to the testing laboratory. Test chambers were rolled paper containers. Each container was covered with a plastic petri dish through which a glass vial containing 50% sugar-water was inserted. This food source was available to the test bees throughout the study.

Test bees were maintained in the dark except during dosing and daily observations. Test temperatures ranged from 23 to 27° C.

Five treatment levels, 13, 22, 36, 60, and 100 ug/bee were tested along with a solvent control and a negative control. Two replicates were tested at each concentration with 50 bees per replicate. The solvent control bees received a volume of acetone equal to the largest volume used during the test.

Recently collected bees were immobilized with N_2 to facilitate handling. Each bee was individually dosed on the abdomen with the appropriate test solution. Solvent control bees were dosed with 2 ul of acetone.

Observations on mortality and signs of toxicity were made twice on the day of initiation and once on Day 1 and Day 2 after dosing. The LD_{50} value for tebuthiuron was determined by inspection.

12. Reported Results:

Mortality rates at the 13, 22, 36, 60, and 100 ug/bee dosages did not exceed 11% and did not appear to be treatment related. Mortality in the negative control and solvent control groups was 5% and 7%, respectively.

13. Study Author's Conclusions/Quality Assurance:

The honey bee acute contact LD_{50} value for tebuthiuron for this study was determined to be greater than 100 ug per bee, the highest concentration tested.

A quality assurance statement was included by Marshall Hynson, Quality Assurance Officer for Wildlife International.

14. Reviewer's Discussion and Interpretation:

a. Test Procedures - Test procedures complied with those outlined in the HED Standard Evaluation Procedure for the honey bee acute contact study. There were no problems in this regard.

b. Statistical Analysis - Analysis of data was by inspection.

c. Discussion/Results - The LD_{50} for the honey bee is greater than 100 ug/bee, the highest concentration tested, for technical tebuthiurion. This chemical may be characterized as practically nontoxic to honey bees.

d. Adequacy of the Study

1) Classification - Core

2) Rationale - SEP protocol; no major deviations noted

3) Reparability - N/A.

15. Completion of One-Liner for Study: N/A

16. CBI Appendix: N/A.